proved to be efficacious in the management of SSTI. An economic evaluation was performed to determine the most cost-effective alternative between daptomycin and linezolid for the treatment of SSTI with failure to vancomycin therapy. **METHODS:** A cost-effectiveness analysis was performed from an institutional perspective (Mexican Institute of Social Security, IMSS). Both drugs are included within the treatment guidelines as secondary therapy for SSTI following vancomycin failure. As required per guidelines, use of concomitant therapy with ciprofloxacin and metronidazole was also considered. Effectiveness and safety data was taken from published literature; effectiveness parameters included clinical and microbiological cure, and safety parameters included drug-related adverse events. Resource use data was obtained from the institution; total direct costs of hospitalization and treatment were considered. The source of the unit costs was the institution, current for 2010. All costs are expressed in local currency (Mexican Pesos, MXP). The time horizon was less than 1 year; no discount rate was used. A decision tree was built, considering two possible outcomes: success and failure to treatment. A probabilistic sensitivity analysis was performed through a Monte Carlo simulation with 100,000 iterations to confirm the robustness of the model. **RESULTS:** The results show a cost/effectiveness ratio of $52,135.67 MXP for daptomycin compared to $67,623.14 MXP for linezolid, making daptomycin a more cost-effective alternative (dominant) for the treatment of SSTI. The sensitivity analysis confirmed the robustness of the model. **CONCLUSIONS:** From an institutional perspective in Mexico, daptomycin is a more cost-effective (dominant) alternative than linezolid for the treatment of SSTI in patients that failed treatment with vancomycin.

PIN30

## COST EFFECTIVENESS ANALYSIS OF THE COMBINATION EFAVIRENZ (EFV), TENOFOVIR (TDF) AND EMTRICITABINE (FTC) ONCE A DAY IN TREATMENT OF NAÏVE ADULT PATIENTS WITH HIV INFECTION IN MEXICO

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**OBJECTIVES:** To evaluate the cost effectiveness analysis of Efavirenz/Emtricitabine/Tenofovir ((TDF+FTC+EFV) in naïve patients with HIV from the public health system Mexican perspective. **METHODS:** A decision tree model was developed to estimate the efficacy and expected value of direct medical costs. Efficacy was measured by the percentage of individuals with plasma HIV RNA < 50 copies/mL and and < 400 copies/mL. at 96 weeks, based on a systematic review and meta-analysis of clinical trials of regimens in treatment-naïve populations. Model follows the recommendations of antiretroviral persons handling Guide with HIV in Mexico (2009 SSA). The direct costs and treatment of adverse events in the treatment of HIV were estimated. When the patient failure, the cost of new treatment was added. The unitary costs were obtained from the Mexican public health institutions. All costs were calculated in 2010 Mexican Pesos (MXP). Incremental-cost-effectiveness-ratios were expressed as cost per 1% of individuals with plasma HIV RNA < 50 copies/mL and and < 400 copies/mL Costs and outcomes were discounted at 5%. Probabilistic sensitivity analyses via Monte Carlo simulations were undertaken to incorporate likely distributional properties of key model. **RESULTS:** EFV+FTC+TDF was most effective than others comparators with probability of 0.734 (CI95%:0.601-0.835; n=514) -except when compare with TDF/FTC + ATV/r with efficacy of 0.743 CI95%:0.700-0.786; n=440- and 0.746 (0.686-0.798; n=232) of having <50 or <400 RNA copies/ml respectively at 96 weeks, EFV+FTC+TDF resulted as the alternative with less unitary average total cost ($60,026.00 MX and $60,122.00, respectively). TDF/FTC/EFV combination is a dominant option and cost saving compared to alternatives, except TDF/FTC + ATV/r (cost per 1% of individuals with plasma HIV RNA < 50 copies/mL of $8,490,581).Deterministic and probabilistic sensitivity analysis showed that the findings are robust. **CONCLUSIONS:** Efavirenz/Emtricitabine/Tenofovir is a cost effective drug on 96 weeks for the treatment of adult naïve patients with HIV infection in Mexico.

PIN31

## COST-EFFECTIVENESS ANALYSIS OF DIFFERENT APPROACHES TO THE DIAGNOSIS AND TREATMENT OF INFLUENZA-LIKE ILLNESS IN HEALTHY ADULTS

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**OBJECTIVES:** This study predicted and analyzed outcomes among six options (universal antiviral therapy without testing [Universal], empiric therapy without testing [Empiric], empiric therapy with lab testing [Empiric_Lab], treatments responding to lab results [Standard], treatments responding to point-of-care testing [POCT] results and no treatment [NoTx]) in healthy adults with influenza-like symptoms who visit physicians within or beyond 48 hours of the onset of symptoms. **METHODS:** A decision model was created to predict total and direct medical costs, symptom-free days, quality of life and days of work lost within 14 days from the perspective of patients. Most model inputs were derived from the literature; some were obtained from internal data and expert opinions. Total costs (in $2009 USD) included costs associated with prescriptions/OTC, tests, complications, hospitalization and work-day loss. Cost-effectiveness analysis, cost-utility analysis and probabilistic sensitivity analysis were performed. **RESULTS:** Total costs per symptom-free day were $119 ($874/7.3), $130 ($893/6.9), $163 ($1,086/6.7), $162 ($1,103/6.8), $189 ($1,117/5.9) and $280 ($1117/4.2) for Universal, NoTx, Standard, POCT, Emiric_Lab and Empiric, respectively. Total costs per quality of life were $1,560 ($874/0.56), $1,641 ($893/0.54), $2,156 ($1,086/0.50), $1,949 ($1,103/0.57), $1,993 ($1,117/0.56) and $2,195 ($1117/0.54) for Universal, NoTx, Standard, POCT, Emiric_Lab and Empiric, respectively. Direct medical costs were $238, $169, $380, $336, $358 and $193 for Universal, NoTx, Standard, POCT, Emiric_Lab and Empiric, respectively. Direct medical costs per symptom-free day were $46, $25, $57, $49, $60 and $$46 for Universal, NoTx, Standard, POCT, Emiric_Lab and Empiric, respectively. Direct medical costs per quality of life were $425, $311, $755, $594, $639 and $$360 for Universal, NoTx, Standard, POCT, Emiric_Lab and Empiric, respectively. Sensitivity analysis indicated the study results were robust. **CONCLUSIONS:** With consideration of total costs, the universal option was the most cost-effective option. With consideration of direct medical costs only, no treatment is the most cost-effective option.

PIN32

## PHARMACOECONOMIC ANALYSIS OF MARAVIROC IN TREATMENT-EXPERIENCED HIV PATIENTS IN BRAZIL

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**OBJECTIVES:** Antiretroviral combinations have been successful in delaying human immunodeficiency virus (HIV) progression; however, drug resistance may occur. Maraviroc and enfuvirtide are two drugs currently used in treatment-experienced HIV patients. The objective was to determine the economic impact of maraviroc versus enfuvirtide in HIV patients previously treated with conventional antiretrovirals. **METHODS:** A Markov model was developed to assess the economic consequences of the targeted therapies. The type of analysis was cost-minimization based on the premise of clinical equivalence. The clinical outcome used to support the clinical assumption was the odds ratio of decreasing >=1.0 log10 viral copies/ml over placebo. Targeted population was composed of adults infected with HIV virus (CCR5 co-receptor tropism), who underwent previous anti-HIV treatments and proved therapeutic failure. Model input data derived from a previously observed cohort of HIV patients in Brazil. A lifetime horizon was used. The economic perspective was that of the Brazilian Ministry of Health (MoH) as a payer and provider of medical services, treatments, and healthcare to its beneficiaries. Costs were expressed in 2010 Brazilian Currency (1BRL=0.59USD). Univariate and multivariate (Monte Carlo) analyses tested model robustness. **RESULTS:** An indirect comparison between the interventions showed that the effects of the drugs over placebo was similar from a clinical (odds ratios with approximate values) and statistical (overlapping confidence intervals) standpoints. Thus, clinical equivalence between the drugs was assumed. The economic analysis showed that the total cost of anti-HIV treatment per patient with maraviroc was approximately BRL17 thousand lower than enfuvirtide. Probabilistic sensitivity analysis reported 87% chance of having reduced treatment costs by choosing maraviroc over enfuvirtide. **CONCLUSIONS:** The use of maraviroc in treatment-experienced HIV patients showed to be beneficial for the Brazilian MoH in reducing the economic burden of the disease. The estimated annual budget impact ranged between BRL 8.0 to 10.5 million favorable to cost reduction.

PIN33

## COST-UTILITY ANALYSIS OF RALTEGRAVIR IN HIV-INFECTED TREATMENT NAÏVE PATIENTS IN SWEDEN

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**OBJECTIVES:** Raltegravir, an integrase inhibitor of HIV-1, is approved for use in both treatment naïve and treatment experienced HIV-1 infected patients. In Sweden, raltegravir is reimbursed for patients with documented drug resistance and used predominately in heavily treated experienced patients. This study aims to investigate the cost-effectiveness of using raltegravir in treatment naïve patients versus using raltegravir as a salvage treatment. **METHODS:** A three-stage continuous-time Markov model representing successive HIV therapies was developed to predict the costs and quality-adjusted life years (QALYs) over a 50-year time horizon. Patients progressed to the next stage in the model as they failed or discontinued the current therapy for toxicity reasons. In each stage patients moved between 18 health states based on CD4 and HIV RNA levels. At anytime patients could die, suffer coronary heart disease or develop acquired immunodeficiency syndrome (AIDS). Initiation on a raltegravir-based regimen was evaluated versus initiation on a protease inhibitor (PI)-based regimen. During the second stage patients received a non-nucleoside reverse transcriptase inhibitor based regimen. Patients initiating on raltegravir progressing to the third stage received optimized salvage therapy (OT) whereas patients initiating on a PI received OT plus raltegravir. Data on effectiveness was gathered from randomized clinical trials and an HIV/AIDS database. Utilities and health care resource use were gathered from the literature and adapted to Swedish situation using expert opinion. **RESULTS:** Raltegravir-initiating treatment strategy offered longer undiscounted life expectancy compared to PI initiating strategy [20.51 vs. 18.60 years]. The incremental cost-utility ratio for using raltegravir in treatment naïve patients versus using raltegravir as a salvage treatment was 85 182 SEK per QALY ($12,564/QALY). Results were sensitive to analytical time horizon. **CONCLUSIONS:** Given the data and methods used, the model suggests that using raltegravir in treatment naïve patients compared to using raltegravir as a salvage therapy is cost-effective.

PIN34

## INTRANASAL LIVE ATTENUATED (LAIV) VERSUS INJECTABLE INACTIVATED (TIV) INFLUENZA VACCINE FOR CHILDREN AND ADOLESCENTS: A CANADIAN COST EFFECTIVENESS ANALYSIS

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**OBJECTIVES:** Although influenza affects all age groups, influenza is common in children. Between 15% and 42% of preschool and school-aged children experience influenza each season. Recently, LAIV has been approved in Canada for use in

eligible persons aged 2-59 years of age. The study objectives were to determine the cost-effectiveness of LAIV compared to TIV in Canadian children and adolescents from a Ministry of Health (MoH) perspective and a societal perspective. **METHODS:** A previously published US cost-effectiveness model using patient-level data to compare LAIV and TIV was supplemented by secondary (e.g. literature) and primary data (i.e. survey of 144 Canadian physicians). To compare the costs and benefits of LAIV and TIV, a cost-utility analysis was conducted. Parameter uncertainty was addressed through probability sensitivity analysis (PSA). **RESULTS:** Although LAIV increased vaccination costs compared to TIV, LAIV reduced the number of influenza illness cases and lowered the number of hospitalizations, ER visits, outpatient visits and parents' days lost from work. The estimated offsets in direct costs saved were $4.19 per vaccinated child aged 2-17 years. Societal savings were $35.33 per vaccinated child. When costs and outcomes were considered, LAIV was the dominant strategy when compared to TIV. At a willingness to pay of $50,000 per QALY gained, the results of the PSA indicated that the probability of LAIV being cost-effective was almost 1. **CONCLUSIONS:** LAIV reduces the burden of influenza in children and adolescents. Consistent with US results, vaccinating children with LAIV instead of TIV is the dominant strategy from a societal and MoH perspective.

PIN35

CLINICAL EFFECTIVENESS AND COST UTILITY OF ENTECAVIR VERSUS LAMIVUDINE AND ADEFOVIR IN CHRONIC HEPATITIS B VIRUS (HBV) PATIENTS IN MEXICO

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**OBJECTIVES:** To estimate the long-term costs and effectiveness of entecavir compared with lamivudine and adefovir in treating chronic HBeAg-positive infection. **METHODS:** We compare key outcomes related to survival, costs, and QOL for HBV patients. A lifetime Markov model was used to estimate the expected outcomes and costs for HBV patients treated with entecavir vs lamivudine and adefovir. The impact of treating HBV with entecavir, lamivudine and adefovir in patients who are positive for hepatitis B e antigen (HBeAg) was based on the efficacy and safety results of the Phase 3, double-blind, randomized controlled trial. Utility values were derived from published literature. The cost-effective analysis was conducted from the Mexican Healthcare perspective. Costs were derived from the literature and expert interviews, future costs and effects were discounted at 5% per recommendations for analyses in Mexico. All costs are presented in 2010 US dollars. Multiple 1-way sensitivity analyses were performed to address uncertainty. **RESULTS:** The model projects an accumulated discounted cost to the Mexican healthcare system per patient receiving the entecavir regimen of $28,356 compared to $28,325 for adefovir and $27,901 for lamivudine regimen. The base-case analysis presented incremental cost-effectiveness ratios for entecavir vs adefovir and lamivudine of $123 per QALY and $ 1,574 per QALY respectively. These values are in accordance with the recommendations of the Commission on Macroeconomics and Health, WHO, suggesting that health technologies with ICERs below the per capita GDP are considered very cost-effective. Results were robust to various assumptions tested in the sensitivity analysis. **CONCLUSIONS:** Results from this study analyses suggest that in the Mexican setting, use of entecavir in place of adefovir and lamivudine for treatment of HBV is likely to be cost effective. These conclusions are supported by conservative assumptions and sensitivity analysis.

## Infection – Patient-Reported Outcomes & Preference-Based Studies

PIN36

ANTIRETROVIRAL REFILL ADHERENCE IN COMMUNITY HIV SPECIALTY PHARMACIES (HIV-SP) VERSUS NON-SPECIALIZED PHARMACIES (NSP)

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**OBJECTIVES:** Community pharmacies focused on HIV offer enhanced services to assist patients taking antiretrovirals (ARV), yet the impact of these services is unclear. The objective of this study was to determine differences in patient characteristics, regimen characteristics, and regimen refill adherence for HIV-SP versus NSP users. **METHODS:** We conducted a retrospective database study of patients with ARV claims from May 2007 – August 2009 at California Walgreens pharmacies. A modified medication possession ratio (mMPR) was used to calculate regimen refill adherence. Patients were deemed "regimen adherent" on any given study day if they possessed three or more antiretroviral drugs that included: a protease inhibitor, a non-nucleoside reverse transcriptase inhibitor, raltegravir, an entry inhibitor, abacavir, or tenofovir. A patient's regimen adherent days were summed, then divided by the total number of study days contributed to calculate the mMPR. A multivariable logistic regression model was constructed to determine independent factors which contributed to having > 95% regimen refill adherence. **RESULTS:** 4254 HIV-SP and 11679 NSP users were included. Compared to NSP users, HIV-SP users traveled farther to their pharmacies (5.03 vs. 1.26 miles), filled more chronic disease medications (35% vs. 30%) and psychotropics (42% vs. 39%), and received more fixed dose combination (FDC) ARVs (92% vs. 83%;); all $p < 0.01$. Median regimen mMPR was higher for HIV-SP users (90% vs. 77%, $p < 0.0001$). After adjustment for various factors, both the use of HIV-SP (OR= 1.79, 95% CI 1.72-2.08) and fixed dose combination ARV tablets (OR=3.3, 95% CI 2.86-4.01) were associated with a greater likelihood of having >95% regimen refill adherence. **CONCLUSIONS:** Patients filling their prescriptions at HIV-SP are more likely to use fixed dose combination ARV and have higher regimen refill adherence; particularly those taking FDCs. HIV-SP should be further explored to determine whether specific services improve patient adherence.

PIN37

HOW MANY IMMUNIZATION DOSES WERE MISSED IN PEDIATRICES YOUNGER THAN 2 YEARS?

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**OBJECTIVES:** Immunization dose was considered as a missed immunization dose if pediatric didn't receive at least one immunization dose. The aims of this study are to determine the frequency and percent of missed doses among pediatric immunization schedule, to determine the number of immunization doses missed by each child, and to evaluate the correlation between missed dose frequency and parent's knowledge. **METHODS:** Data was collected retrospectively from 528 pediatric immunization cards in Iraq to obtain the immunization history of each individual child. This study was restricted the analyses to the vaccines administered before age of 2 years. Each pediatric must received seven doses at seven different times, every dose consist of many types of vaccines. Validated questionnaire was used to measure immunization parent's knowledge and Spearman rho correlation test was used to evaluate the correlation between missed dose frequency and parent's knowledge. **RESULTS:** More than 30% of missed immunization doses were shown in the seventh or last dose (OPV+DTP) at 18 months of age. The majority of pediatrics (54.1%) was immunized without any missed immunization dose out of seven immunization doses. Four pediatrics (0.8%) were only having six missed immunization doses. Missed immunization dose found to be negatively correlated with knowledge score (correlation= −0.263, P-value<0.001). **CONCLUSIONS:** This study suggests that compliance with WHO immunization recommendations is low and inappropriate immunization doses were occurred frequently, and leading to incomplete or partial immunization compliance. With an increase in parent's knowledge of immunization guidelines against infectious agents, it is very important to implement strategies that will lead to improved and developed immunization practice and childhood immunization coverage in the future.

PIN38

RIGHT IMMUNIZATION DOSES RECEIVED BY PEDIATRIC YOUNGER THAN 2 YEARS

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**OBJECTIVES:** Immunization dose was considered as a right immunization dose if it was administered at the recommended age. The aims of this study are to determine the frequency and percent of this type of doses among pediatric immunization schedule, to determine the number of right immunization dose received by each child, and to evaluate the correlation between right dose frequency and parent's knowledge. **METHODS:** Data was collected retrospectively from 528 pediatric immunization cards in Iraq to obtain the immunization history of each individual child. This study was restricted the analyses to the vaccines administered before age 2 years. Each pediatric must received seven doses at seven times, every dose consist of many types of vaccines. Validated questionnaire was used to measure immunization parent's knowledge and Spearman rho correlation test was used to evaluate the correlation between right doses frequency and parent's knowledge. **RESULTS:** More than 45% of right immunization doses were shown in the first dose (BCG+OPV+HEP B.) at first week of pediatric life. The majority of pediatric (28%) were immunized with one right immunization dose out of seven immunization doses. Four pediatric (0.8%) were only immunized with seven normal immunization doses, while 132 pediatric (25%) were immunized without any dose as right immunization dose. Right immunization dose found to be positively correlated with knowledge score (correlation= 0.358, P-value<0.001). **CONCLUSIONS:** This study found that compliance with WHO immunization recommendations is low and inappropriate immunization doses were occur frequently, and leading to incomplete or partial immunization compliance. With an increase in parent's knowledge of immunization guidelines against infectious agents, it is very important to implement strategies that will lead to improved and developed immunization practice and childhood immunization coverage in the future.

PIN39

IMMUNIZATION BARRIERS AND SUGGESTED SOLUTIONS IN IRAQ

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**OBJECTIVES:** Vaccine barriers addressed in this study were included lack of education, lack of funding, lack of vaccine availability, lack of medical facilities, and fear of a side effect. The aims of this study are to determine immunization barriers and to evaluate the solutions suggested by parents. **METHODS:** A cross sectional prospective survey was carried out among 528 Iraqis parents with child had improper immunization schedule to obtained demographic data of immunized children. Translated and validated questionnaire were administered to parents, it consisted of multiple choice questions. The questions were related to the immunization barriers and how to decrease this barrier? **RESULTS:** More than 90% of pediatrics have improper immunization schedule with immunization doses errors. The majority of parents perceived that the lack of vaccine availability was the most common immunization barrier (51.5%), and more than 42% of parents perceived that the lack of education was the important barrier, while 88.4% of parents were thought that the lack of founding wasn't important immunization barrier. More than 60% of parents suggested increasing immunization programs in the media to promote pediatrics immunization, and 44.7% of parents suggested increasing mother's education to promote immunization. But 77.5% of parents thought that any increase in funding will